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GARDEN ROSES

1929

How to Make Them Grow and Bloom



BOBBINK & ATKINS

Rutherford, New Jersey

ROSES

KINGS and queens have never received greater homage and attention from the peoples of the world than the Rose. Gold and silver medals, trophies, and other honors have been showered upon the Rose in every country where it grows. Down through all ages it has been known and accepted as the "Queen of Flowers"—adored and loved by all. Its presence is sensed in the garden, and upon all occasions its beauty and fragrance is outstanding.

To carry on this great Rose interest, we are now growing Rose plants for every place and purpose, in such quantities as to make them available to anyone desiring to plant them. More than one hundred acres of our Nursery is given up to the cultivation of the Rose. Half a million plants of our own production will be ready for shipment this autumn, with a larger number reserved for filling orders for spring planting.

Present and prospective customers need not hesitate to place their orders for their favorites as we have more than seven hundred and fifty kinds, including new and old varieties, of two-year-old, low-budded, field-grown plants, all listed and described in this book of Roses. They have been brought together from every part of the world. Our one great object in doing this is that everybody, everywhere, may have a garden of Roses, planted with varieties suitable for all locations and localities.

Comments on the merits and demerits of each variety have been made from observation in our fields, with the thought of helping the buyer in making a perfect selection. Many of the descriptions are those of the hybridizer, the raiser, or introducer, and are generally accepted by rosarians.

Our special Rose-plant storage buildings have been constructed, not alone to maintain the plants in perfect condition, but also with the thought of service, and that our Rose patrons may have their orders shipped any time from October to May.

We firmly believe in autumn planting whenever or wherever possible. Our plants are dug in October and November and can be planted at that time in many localities by following our autumn planting suggestions.

Intending purchasers will find it advisable to order as soon as possible after receiving this book, for while we have several hundred thousand plants in several hundred varieties, each day the stock of one or more, and some days many, are removed from the list. You are invited to visit our nursery. We shall gladly show you our Rose-plant operations, whatever they may be at the time of your visit.

Doornik & Atkins

GARDEN ROSES

HOW TO MAKE THEM GROW AND BLOOM

ROSES are not difficult to grow. In fact, certain types of roses are most easy. They demand nothing which is not given to all garden plants in some measure. With sunshine and a well-drained bed, fertilized as heavily as possible, cultivated in summer, and protected from zero winters, roses will be happy. All directions for growing roses are elaborations of those fundamental principles. Let the beginner remember them, and work out the details to his own satisfaction.

How to Use Roses

Roses may be used in many ways. A rose-garden of only a few beds provides plenty of flowers for cutting. A single bed of a few dozen plants is a delight.

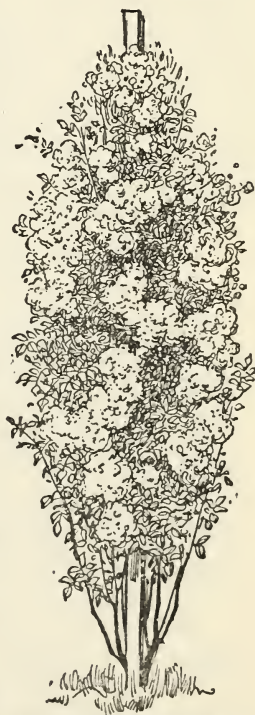
Climbing roses will cover walls and fences, they will shade a porch, grace garden arches, and mat themselves on banks and rocks and stumps. Carefully trained, they make shapely bushes on the lawn, but, best of all, they may be grown as pillars tied to strong light posts a few feet high and clipped to columnar form. Other types of roses may be used to border paths or beds; some are suitable for hedges, others for the shrubby border or specimens. How to use roses is a question of knowing them. There is scarcely any use or situation to which they cannot be adapted.

Kinds of Roses

Because they vary greatly in hardiness, i.e., in their ability to survive cold, the severity of winter weather often determines what roses a man will grow. Some of them suffer no apparent damage from severe cold, but others are too tender to endure frost.

Roses vary in flowering habit and beauty of bloom. Some bear blossoms in early summer only, and others continue to bloom until stopped by winter weather.

Roses vary in height, vigor, and manner of growth; some are dwarf, others shrubs of great size.



Climbing Rose trained
as a pillar

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One must know something of these various types before he can grow them with the greatest amount of pleasure and profit.



Tea Rose

Tea Roses

Tea roses are tender and require care out of proportion to their value where zero weather may be expected. They are at home in southern California and on the Gulf Coast, where they grow into large bushes. In colder regions, they freeze to the ground annually and rarely attain much growth. The plants are generally vigorous and healthy. Flowers are usually double, of beautiful form, fragrant, and produced liberally throughout the growing season.

Hybrid Tea Roses

Hybrid Teas resemble the Teas in many respects. The flowers are similar; they are reasonably ever-blooming; as a class they are low-growing and may occupy the same bed with Teas. They are fairly hardy over a great portion of the country. In fact, Hybrid Tea roses may be grown successfully in almost any part of the United States with protection in winter, according to the severity of the cold. As a class they are subject more or less to rose diseases, but certain varieties are quite resistant. The bulk of garden roses are Hybrid Teas, and beginners must familiarize themselves with a number of them at the outset.



Hybrid Tea Rose



Hybrid Perpetual Rose

Hybrid Perpetual Roses

Hybrid Perpetuals are quite different. They are much hardier than Teas and usually succeed where Hybrid Teas fail. They are recommended for the North and cooler parts of the country, although there are a few kinds which do well in the South. They are a most magnificent spectacle in full bloom the latter part of June or early July. The flowers are large, double, and almost all of them intensely fragrant. Occasional flowers are produced in summer and autumn. For garden decoration they are unsurpassed, and no one really knows roses until he is familiar with at least a half dozen Hybrid Perpetuals. They vary considerably in habit, ranging from 3 to 6 feet or more in height. If

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left to themselves they will form large bushes, but it is better to plant them about 30 inches apart in beds and keep them cut back yearly so that they do not exceed their bounds.

Pernetiana Roses

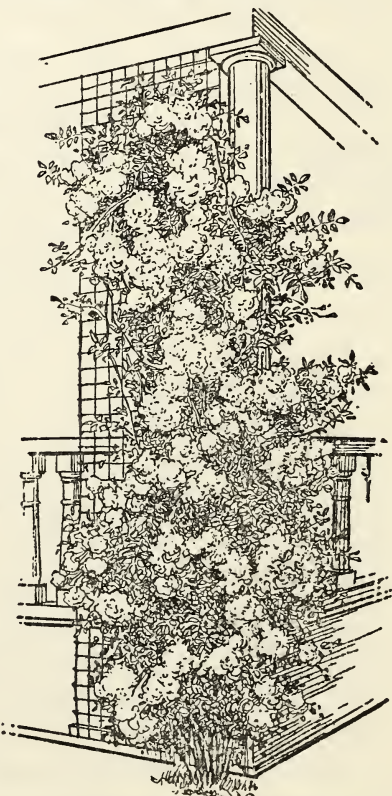
Pernetiana is a name frequently applied to certain modern roses which have been developed from the Austrian Briar and the foregoing classes. In general they resemble Hybrid Teas or Hybrid Perpetuals in habit and requirements, and in most catalogues are included with them. They display rich shades of yellow and coppery pink which are found in no other class. They are very popular. Their chief drawback is susceptibility to disease. Except for a very few indispensable ones, the beginner had better leave them alone.

Polyantha Roses

Polyantha roses are commonly called Baby Ramblers because their flowers resemble the old-time small-flowered ramblers and are borne in bunches like them, but the plants do not "ramble" at all. They are small, compact bushes suitable for massing or edging. They are nearly as hardy as Hybrid Perpetuals, and are truly everblooming. They may be had in all rose colors. Most of them are scentless but a few are delicately fragrant. The class is subdivided into several groups, some of which are more vigorous than others. Some bear perfectly formed little roses resembling the Teas; others have flowers comparable in size to Hybrid Teas, and recently a few climbers have been developed in this class. They should be well represented in any large collection.

Climbing Roses

Climbing roses are easiest to understand if one remembers that every kind of rose develops a climbing type sooner or later. Thus there are Climbing Teas, Climbing Hybrid Teas, Climbing Hybrid Perpetuals, and Climbing Polyanthas, besides those developed from wild roses of climbing or trailing habit. Such diversity of origin provides flowers of many types, all colors, and plants of all degrees of hardiness. What has been said relative



Climbing Rose at Porch

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to the Teas, Hybrid Teas, Hybrid Perpetuals, and Polyanthas applies also to the climbing types of those classes, although where protection is necessary in winter it is difficult to protect the tender climbers effectively. In those districts reliance must be placed upon Hybrid Wichuraiana and Hybrid Multiflora climbers.

Hybrid These are the most important hardy climbers. The
Wichuraianas original Wichuraiana is a slender, creeping rose
with beautiful foliage and the cluster-blooming habit.

Its descendants retain its foliage to some extent and most of them make fine climbers, but the flowering habit is much changed. The older varieties bloom in large bunches of tiny flowers, but the newer ones have large blooms, comparable in beauty to Hybrid Teas and Hybrid Perpetuals, borne singly or in small sprays. As a rule, the smaller-flowered kinds are hardier. Nearly all of them survive temperatures near zero, but if the thermometer falls much below that, they are likely to be injured. Those with yellow or nearly yellow flowers are the most tender.

The canes are slender and pliable so that they can be trained easily. They have but one blooming season, although they remain in flower a long time, and a selection of early and late blooming varieties will enable one to enjoy their flowers over a long period.

Hybrid An example of Multiflora ramblers is the familiar
Multiflora Crimson Rambler which was so popular a few years
Roses ago. The canes are stiff and arching; the foliage is
quite large and unusually subject to mildew. They

bloom in clusters of small flowers, although there are one or two kinds which produce fairly large blooms. The Multifloras are quite as hardy as the Wichuraianas, and hardier than the large-flowered members of that group. They make graceful fountain-like bushes when used as specimens, and really do better that way than grown against a wall. They tend somewhat toward the Polyanthas, and combinations with that group have produced varieties which are almost hardy everblooming climbers and perhaps the future will develop good ones of the continuous blooming type.

Other Climb- Other climbers are suited to more temperate and
ing Roses frostless regions. *Noisette Roses* are cluster-
blooming climbers, with both small and large flowers.

They are quite tender, sharing many qualities with the Teas, and are extremely beautiful. *Banksian Roses* are vigorous climbers. They are double, small-flowered, and fragrant. There are two varieties, white

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and yellow. The *Cherokee Rose* is a tender, white-flowered, single rose which is naturalized in the southern states, and an excellent garden rose. There is a pink-flowered variety. *MacCartney Roses* are similar, and several varieties are available. A new race of *Hybrid Gigantea Roses* is coming into notice. While these last two groups are hardier than Noisettes and Teas, they are adapted only to the warmer sections of the country for which they promise much.

Other Rose-Types There are many other kinds of roses, none of which is of much interest to the beginner, but sooner or later a few of them creep into every garden.

Provence or *Cabbage*, *Gallica*, and *Damask Roses* are genuine old-fashioned roses. They are intensely fragrant; perfectly hardy, rather straggling in growth, and vary considerably in type of flower. *Moss Roses* belong to this group, but are distinguished by the beautiful mossy growth which covers the bud and surrounds the half-open flower. They are only once-flowering.

Penzance Briars are single or semi-double types of the common sweetbriar. There are lovely colors, including pale yellow and copper. They make strong-growing thorny bushes suitable for hedges and shrubberies. They are usually hardy.

Austrian Briars are yellow roses. There are two double ones, *Persian Yellow* and *Harison's Yellow*. The former is rich yellow, but unreliable. *Harison's Yellow* is most dependable and beautiful, especially for the coldest regions where it is entirely hardy. Its flowers are clear bright yellow, semi-double, fragrant, and lavishly produced in early June. There is a single type known as *Austrian Yellow*, and a similar one known as *Austrian Copper*, which has a remarkable copper color. It is rather hard to grow. The whole class is once-flowering only.

The *Pernetianas* mentioned before resulted from blending this class with *Hybrid Teas* and *Hybrid Perpetuals*. Similar to the *Austrian Briars* are *Rosa Hugonis*, *R. Xanthina*, and *R. Ecæ*, hardy, single, yellow-flowering shrubs, suitable for specimen bushes or shrubbery borders.

Rugosa Roses are hardy, rough-leaved, strong-growing bushes varying greatly in bloom. The best hybrids are extra-



Hybrid Rugosa Rose

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ordinarily vigorous with flowers like Hybrid Perpetuals, but others have rough and flimsier flowers. The wild types are very fine. They flower more or less the whole season. Lately, there has been developed a small-flowered cluster type similar to the Polyanthas.

Chinas, *Hybrid Chinas*, *Bourbons*, and *Hybrid Bourbons*, are now reduced to a few representatives of each. Their distinctions are not very clearly marked. What are generally termed *China Roses* are small bushes with slender wood and scentless flowers in a variety of colors. They are the *Monthly Roses* of old-time gardens. *Bourbons* are similar, but the flowers are better shaped and those now available are generally fragrant. Both kinds are everblooming and fairly hardy in the North with protection. There are other relicts of former great classes; but these are seldom offered in catalogues, and are usually acquired by accident or thorough search. *Wild Roses* vary so much that justice cannot be given them in so little space.

The Best Roses

The best roses for any particular person depend upon where he lives and what he likes. If his home is in the far North, he must do without Teas and grow Hybrid Teas at the cost of heavy protection in winter. In the South it is a waste of garden space to grow roses which bloom only once in the season, when free-blooming roses of tender varieties will thrive. For the very far South, the Gulf Coast, and California, the Teas are likely to succeed best, and with them, Climbing Teas, Banksias, Noisettes, etc. In the colder regions where the temperature goes below zero for considerable periods, the hardiest species and climbers may be grown without protection and the Hybrid Rugosas may be depended upon. Hybrid Perpetuals will need protection and the hardier Hybrid Teas will endure also. In the intermediate climate all types may be grown, but Hybrid Tea roses will be found most satisfactory over the widest range. It is from that class the beginner should choose his first roses. There are hundreds of roses named and grown, and selection from the confusing list is difficult, particularly in regard to their suitability for different locations.

The American Rose Society attacked this problem by a series of referendums among its members in the Provinces and States of North America, to ascertain which roses were preferred by experienced growers. The result of the last general referendum, that of 1927, is here republished by permission from the American Rose Annual of 1928. These lists are suggestions only. There are dozens of other meritorious varieties to be had from nurserymen.

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The Preferred Dozen Hybrid Teas

Radiance	Los Angeles	Mme. Edouard Herriot
Red Radiance	Mme. Butterfly	Gruss an Teplitz
Ophelia	Duchess of Wellington	Mrs. Aaron Ward
Souv. de Claudius Pernet	Columbia	Kaiserin Auguste Viktoria

The Preferred Newer Hybrid Teas

Dame Edith Helen	Mrs. Henry Bowles	Mrs. E. P. Thom
Wilhelm Kordes	Ville de Paris	Lady Margaret Stewart

The Preferred Climbing Roses

Dr. W. Van Fleet	Mary Wallace	American Pillar
Silver Moon	Paul's Scarlet Climber	Climbing American Beauty

The Preferred Polyantha Roses

Cécile Brunner	Eblouissant	Orléans
Miss Edith Cavell	Lafayette	Chatillon
Baby Doll (Tip Top)		

The Preferred Hybrid Perpetuals

Frau Karl Druschki	Georg Arends	Ulrich Brunner
Paul Neyron	Mrs. John Laing	General Jacqueminot

In the autumn of 1928, a canvas of the expert rose amateurs of United States and Canada was undertaken by the American Rose Society to determine what roses were most generally favored by those who grew many roses in their gardens; the combined choice of these "Experts" is herewith reprinted from the 1929 American Rose Annual:

Hybrid Teas

Etoile de Hollande	Lady Margaret Stewart	Mrs. Charles Bell
Rev. F. Page-Roberts	Mme. Edouard Herriot	Radiance
Betty Uprichard	Mme. Butterfly	Willowmere
Souv. de Georges Pernet	Mrs. Henry Morse	Mme. Jules Bouché

The following Hybrid Perpetuals were also highly regarded.

Gloire de Chédane-Guin- oisseau	Georg Arends Frau Karl Druschki	Clio
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Other Roses receiving favorable mention included these Hybrid Teas.

William F. Dreer	Isobel	Dame Edith Helen
Margaret McGredy	Gruss an Teplitz	Los Angeles
Jonkheer J. L. Mock	Souv. de George Beckwith	Feu Jos. Looymans
Mrs. A. R. Barraclough	Lord Charlemont	Red Radiance

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The foregoing lists are reliable, but they do not include all the good roses, and they do include a number of varieties which are likely to be superseded by better ones. For that reason, some of them may be unobtainable at times. In such instances, the new rose-grower will do well to take the advice of his nurseryman in regard to selecting other varieties, or consult an experienced amateur. The publications of the American Rose Society are full of information on this subject, and everyone who likes roses ought to become a member of that organization. The dues are \$3.50 a year, and the Secretary's office is at West Grove, Pa.

Time to Order Roses

Roses may be ordered from nurserymen or dealers at any time of the year, but they are not usually planted until late autumn or early spring. Potted roses may be had in late spring, and usually give satisfaction. They may be planted during the summer, even when in bloom; but will require shading and careful watering for a few days.

Fall planting is convenient and widely successful; but in regions of severe winters, fall planting is unsafe, and in temperate climates it has often been found that fall-planted roses start into premature growth soon after planting, and are damaged by cold snaps later. Plants obtained in the fall are likely to be good, because they are freshly dug, and have not lost vitality by being kept in storage over winter. Wherever it can be done safely, fall planting is recommended.

Spring planting is safe everywhere, but it must be done early. Dormant roses should be in the ground a few weeks before apple blossoms open. Spring weather or soil conditions often delay planting too long, and nurserymen are so rushed that orders are sometimes held up, and special varieties may be sold out.

Suggestion

Order more than one bush of a kind. Of Hybrid Teas or Teas, three of each variety is about right, unless you want beds wholly of one kind. One plant seldom does justice to the variety. Plants vary just as individuals do; some are better than others. One each of the Hybrid Perpetuals is a fair start for a beginner and one of each kind of climbers, except for arches which always look best if made from two of the same variety.

Order Early

It is very important to send in your order early. Be sure to tell the nurseryman when you want the order shipped. Give him a list of roses from which he may substitute in case he is out of the ones you order. This saves time, trouble, and disappointment.

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Preparing for Roses

Suppose you intend to start with only a few roses, say two or three. Perhaps you have chosen a rambler for your porch, a big bush to stand at the gate, and maybe an everblooming bush or two for trial. In such cases, locations for them have usually been chosen before the roses were ordered and all you can do is to give them the best you have—good soil and protection from enemies.

Rose-Beds

But usually the beginner starts with a dozen or two plants, and a dozen or two roses justify making special preparation for them. Roses do not like the competition of other plants, so it is always best to plant them in beds by themselves.

Choose the best location you can offer them, bearing in mind that they must have a few hours' direct sunlight each day, that they will not endure "wet feet," and that if winters are likely to be severe a shelter or windbreak to the north and west will be helpful.

Shape and Size of Rose-Beds

Because roses vary considerably in habit and vigor, the dimensions of the bed should be adjusted to accommodate the type to be grown in it. Ordinarily, rose-beds need not be wider than 4 feet, which gives opportunity to reach the center of it from either side without walking on the prepared soil. The length of the bed depends upon the number of roses and the space available.

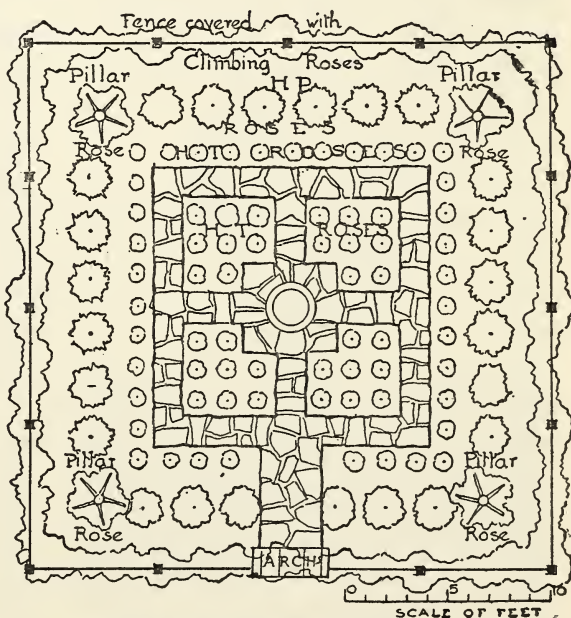
The Rose-Garden

If you intend to plant a large rose-garden, it will be made up of a number of beds, separated by paths. Such beds require the same preparation and care as a single bed. While the preparation need not be elaborate, it must be well done, because nothing can compensate lack of the essentials—good soil, sunlight, and drainage.

Preparation of Rose-Beds

Having chosen a location, examine the soil. If it is reasonably

Because roses vary considerably in habit and vigor, the dimensions of the bed should be adjusted to accommodate the type to be grown in it. Ordinarily, rose-beds need not be wider than 4 feet, which gives



Plan of a small Rose-garden
(Courtesy of American Rose Annual)

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good garden loam, you are lucky beyond words. All that is necessary is to spade it deeply, incorporating well-rotted manure, but if you cannot get that, use commercial fertilizer in the quantity recommended on the packages.

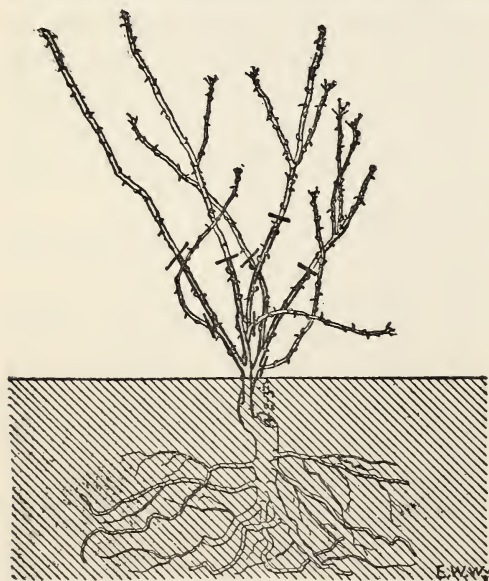
But if the soil is very poor, such as is often the case where material excavated from the cellar is distributed over the grounds, it is necessary to make more strenuous efforts to improve it. The simplest way is to remove such material from the beds altogether, and fill in good soil prepared especially for roses. If necessary, place a six-inch layer of rubble or small stones at the bottom of the bed to provide drainage. In the matter of fertilizing, most authorities give permission to go as far as you like, stating that roses cannot have too rich a soil. In the main that is true, but it is also true that many fine roses have been grown with only a moderate amount of preparation such as might be given to a crop of cabbage or potatoes. Use common sense in preparing rose-beds; there is no need of excessive labor or expense. A really important thing is to get the bed finished and ready for the roses as soon as possible, so that it may have plenty of time to settle before you plant the roses.

Planting Roses

When the roses arrive, if the ground is not frozen or soggy, plant them at once. Open the package under cover to protect them from wind. Remove all dead, bruised, or broken roots with clean cuts. Usually the tops have been

cut back by the nurseryman. If not, the tops of all roses should be cut back to 6 inches or less, before planting; removing entirely all dead and weak, twiggy growth. When all plants have thus been prepared, take them to the beds for planting, being sure to keep the roots covered with damp burlap or in a pail of water.

The holes should be large enough and deep enough to accommodate the roots. It is better to cut back the long roots than to crowd or bunch them. Try to discern how they lay in the ground before they were dug, and restore them



Hybrid Tea Rose properly planted and pruning indicated
Courtesy of New Jersey Agricultural Exp. Station

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to that position. Budded roses should be set deep enough so that the "bud" is 1 to 2 inches below the level of the bed when it is finished. You may recognize the "bud" by an eccentric twist which occurs where the top of the plant joins the root. It is often larger than the rest of the stem and resembles a knot. The root below that bud is a wild stock; the part above is the real rose. It is to keep the stock from asserting itself and overpowering the real rose that it is buried deeply underground. This applies to Teas, Hybrid Teas, Hybrid Perpetuals, and some of the others, but climbers are usually grown upon their own roots and need be planted no deeper than they grew before.

Teas and Hybrid Teas should be planted about 18 inches apart; Hybrid Perpetuals not less than 30 inches; Polyanthas about the same as Hybrid Teas, or closer. Climbers are set singly, or if used to cover a fence or make a hedge, about 3 feet is as close as they may be planted with success, and 6 feet is better; but such spacing varies with the vigor of the roses. Some are much stronger growing than others. These differences must be learned by catalogue descriptions, from rose books, or from people who know. Never be afraid to ask any rose-man or woman about roses. They love to talk about them.

In planting roses, be sure to spread the roots out naturally and to make the soil firm and tight about them. Get into the hole with your feet and pack the earth hard. In autumn, or when the soil is very dry, it is best to cover the roots loosely with fine soil and fill up the hole with water. When it has drained away, fill up with earth, but do not tread it. The water settles the soil around the roots satisfactorily.

Dormant roses planted in the spring ought to be in the ground before the middle of April. When that is impossible, no more time should be lost than necessary. After May 1, heavy plants in pots are obtainable which can be planted at any time. These are satisfactory for one season's growth. Be sure to take up such roses in the fall and straighten out their roots, or they will never amount to much.

Rose Cultivation As soon as roses start into growth, get busy with the hoe and rake. Never permit a weed in a rose-bed.

Keep the surface soil loose and friable at all times, but it must be solid under ground. Roses do not like loose soil at their roots. As the new shoots lengthen, a liquid made by steeping fresh manure in water may be given once a week or every two weeks. A quart or half gallon to each plant is plenty, and always soak the

ground with clear water before feeding, or do it after a rain. Such feeding insures roses against hunger and thirst and guarantees a plentiful harvest of flowers. Liquid manure made from commercial sheep-manure is safe and effective. Bone-meal and sheep-manure, chemical fertilizers or patented rose-foods, may be used, and they are usually successful *if you follow the directions of the manufacturers implicitly* and do not use your own judgment until you have acquired considerable experience. Stop feeding about six weeks before the first frost is expected, to give the plants time to ripen their wood for winter. Blooming will continue through the early frosts until a genuine freeze.

Cutting Roses

Roses ought to be cut freely either for house decoration or merely to keep faded flowers from disfiguring the garden. Early morning is the best time, before the sun is hot upon them. Cut with a sharp knife or scissors, leaving two leaves of the flower stem on the bush. From the bases of these leaves come two new stems and two new roses. If the cut-flowers are to be carried or shipped some distance, let them stand deep in water several hours in a dark cool place before packing. Single or semi-double roses are seldom worth cutting because they fade too quickly. Very double roses should be well open when they are cut or the bud may not unfold.

Rose Enemies

Roses have enemies. The worst is a cold, wet soil and the next is competition with other plants in the same bed. These are entirely within the grower's control.

Avoid them. Two diseases are common—and will ruin the bushes unless checked:



Black-spot on Rose Leaf
(Courtesy of American Rose Annual)

Mildew attacks foliage, buds, and young growth, covering them with a grayish down and causing the leaves to curl and shrivel. Sulphur, in the form of a fine dry dust, is the best weapon with which to combat it. Spraying with bordeaux mixture is good; bicarbonate of soda (baking soda), in the proportion of a teaspoonful to a quart of water, has been found efficacious; and supplying the soil with plenty of sulphate of potash is recommended as a preventive.

Black-spot attacks the leaves, forming little black or purplish dots which enlarge

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rapidly. The leaf develops yellow blotches or turns yellow all over and falls at a touch. This disease spreads rapidly and will quickly defoliate a whole garden. It is caused by diseased leaves lying under the bush from the previous year, or from some similar source. The remedy is to prevent it, or after it has come, to keep it from spreading. Remove all diseased leaves and burn them. Dust the plants thoroughly every two weeks, beginning when the first new leaves have developed, with a dust composed of nine parts dusting sulphur and one part arsenate of lead. This dusting sulphur is a very fine light powder—not the common flowers of sulphur—and may be obtained from most Rose nurserymen or garden supply firms. Bordeaux mixture used as a spray is effective, and if arsenate of lead is combined with it, leaf-eating pests may be controlled. The sulphur-arsenate dust should be used regularly. It will prevent both mildew and black-spot and discourage the minor pests which sometimes attack roses in the garden.

Aphides, or the green plant-lice, which cluster thickly on the tips of the canes and buds, may be destroyed by spraying them with a solution of nicotine sulphate in the proportions recommended on the package. Black-Leaf 40 is the best available source of that material.

Rose-bugs, the awkward light brown beetles which eat the flowers, are difficult to control. Several proprietary remedies are on the market, none of which is completely effective. Hand-picking into a vessel containing water and a little kerosene is the best, and valuable roses may be protected by mosquito netting while the pest is present. It has been recommended to make traps for the bugs, by planting a number of light-colored roses outside the garden, Tausendschön for example. If the trap plants are poisoned with arsenate of lead sweetened with molasses, this is effective, otherwise one breeds greater numbers of the beetles for another year.

These four pests are the worst which attack roses—and fortunately one is not always afflicted with them.

Winter Protection The essential thing in winter protection is to keep the plants dry and shaded from the sun. Heavy protection, especially if it is wet, is bad, and may cause more injury than none. Most damage is caused by the alternate freezing and thawing which occurs in late winter and early spring; but sub-zero temperatures of great severity are disastrous to all except the hardiest roses unless they are protected.

Earth is the best protector. In late fall, hill up the soil about the

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roses as high as possible. If the low places between the roses can be filled with heavy manure, taking care it does not lie against the bushes, a blanket of warmth will be provided as well as needed fertility. The exposed tops of the roses should be shaded by evergreen boughs, leaves, straw, or whatever is available. Small beds may be completely covered with burlap or old carpet; and in the very severe climates they had best be boxed in and roofed tightly to shed water. If one has only a few roses, they may be wrapped in straw jackets or covered with kegs and boxes, either filled with leaves or earth—anything to keep them dry and shielded from the sun. Climbers are difficult to protect unless grown as pillars, or trained on a hinged trellis that can be laid flat upon the ground and covered with leaves or earth. Fortunately, almost all of the hardy climbers will live without protection through temperatures ranging to 5 or 10 degrees below zero, although such severe cold may damage them somewhat. Evergreen boughs or corn-stalks, laid against climbers and fixed so firmly that high winds will not dislodge them, will afford effective protection.

Do not remove the cover too suddenly in the spring. Take it off gradually. Roses are very likely to get nipped by late frosts and light freezes after the first leaves have come. In small gardens a few burlap bags thrown over the bushes on nights when late frosts are expected will save much damage. Owners of large gardens usually work out some method for themselves or accept the damage philosophically.



Showing how to prune Hybrid Perpetuals
(Courtesy of New Jersey Agricultural Exp. Station)

Pruning

Roses are pruned to increase the production of *good* flowers.

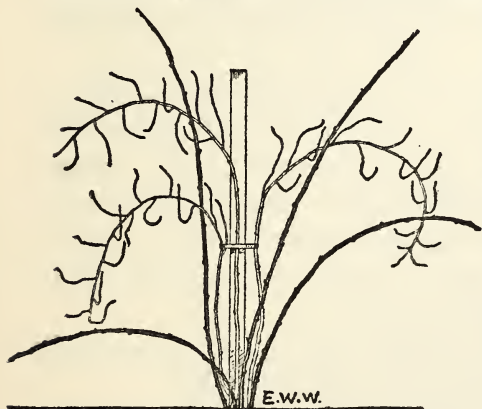
When the protection has been removed from the bushes, cut out all dead shoots, and when the weather is reasonably settled, prune in earnest. Start first with Hybrid Perpetuals. Remove old, rough-barked canes to the ground, or to the point where there is a fine new shoot growing from them. The object is to retain stout green canes of last summer's growth only; although if that reduces the bush too much, older canes may be kept with their last year's shoots shortened

HOW TO MAKE THEM GROW AND BLOOM

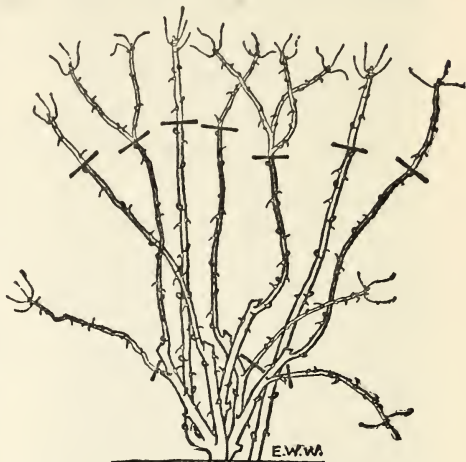
to a few buds. The spring flowers of Hybrid Perpetuals are produced on shoots which grow out of canes of last season's growth; old wood is worthless except for the new growths which it bears. Shorten the canes which remain as much as you have the courage to do, remembering that the shorter you cut them, the fewer and (possibly) finer flowers you will have. Beginners will not go wrong if they cut such canes back one-half.

The principles of pruning Hybrid Teas and Teas are the same, except that the growths are slighter and the twiggy weak wood should be removed as well as the old. Again the beginner is advised to leave half the length of the canes on the bush, and even more in the case of Teas. As he gains experience he will learn how to prune harder for certain effects.

Hardy climbers should not be cut or pruned in the spring, except to cut off dead wood, but when the flowering season is over, all canes which have flowered may be removed entirely to make room for new vigorous shoots from the base. If a big, climbing plant is desired, the flowering canes may be left two or three years, but they must be removed before the bush becomes unmanageable.



Showing how to prune a hardy climber
(Courtesy of New Jersey Agricultural
Exp. Station)



Showing how to prune Hybrid Teas
(Courtesy of New Jersey Agricultural
Exp. Station)

Pruning Rules

(1) Do not allow branches to cross in the middle of a bush.

Remove one of them.

(2) Try to trim all canes on bush roses to nearly the same height, or keep the tall ones in the middle.

(3) Weak-growing canes and bushes may be cut back harder than strong ones.

(4) Make all cuts clean, with a sharp knife or pruning shears.

(5) Make cuts slanting, about a quarter inch above a bud which points in the direction in which you want a branch to grow. Usually this is away from the center of the bush.

G A R D E N R O S E S

(6) Do not be dismayed if Teas, Hybrid Teas, or Hybrid Perpetuals must be cut clear to the ground. They will renew themselves from below and bloom well the same season; but if climbers are killed or cut to the ground, it will require a full season's growth before they will bloom.

(7) Bush roses or shrubbery specimens should not be pruned except to take out dead wood. Shape the bush when cutting flowers for decoration. To cut wood from them in the spring is wasteful because you cut off undeveloped flowers.

Starting Off in Spring

When the roses are pruned, the beds should be raked clean and sprayed with a good fungicide. Lime-sulphur is good. Then well-rotted manure should be worked into the soil, but if it is not available, bone-meal, or some other commercial fertilizer will do. Feed the roses liberally at this time, and as soon as the leaves unfold, begin dusting with the sulphur-lead preparation, and repeat it every two weeks. This will usually prevent black-spot and mildew. Aphides attack the foliage and buds in the early stages, and a dose or two of nicotine solution will cleanse the bushes of them. When the flower buds appear, decide whether you want a few *very fine* flowers or many ordinary ones. If you decide upon a few very good ones, carefully remove the small side-buds, leaving only one fine, healthy bud to each shoot. When color begins to show through the opening sepals, feed the bushes heavily with manure water or some other liquid fertilizer and watch them burst into glory.

Perhaps all this sounds complex. It isn't. If you have only a few bushes it is scarcely any bother at all, ordinary garden sense will teach you how to manage roses with the least possible trouble. Large gardens are always organized for fertilizing and pest-control campaigns into which the roses fit as easily as any other plants. Don't let anyone frighten you from growing roses. A lot of them will grow with no attention beyond ordinary garden care.

Final Rules (1) Choose your first varieties from the American Rose Society's list published in this booklet.

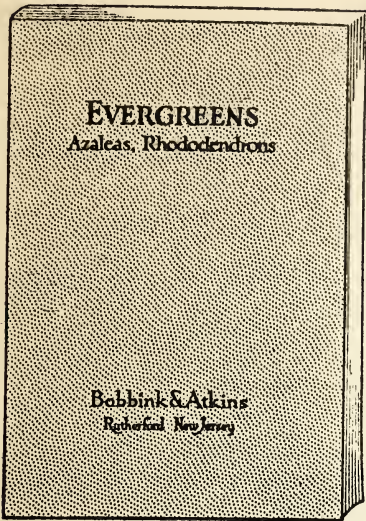
(2) Buy good plants, and put them in the ground early, before the apple trees bloom.

(3) Be sure the beds are well drained, well prepared, and ready for the roses before they arrive.

(4) Fight the four pests strenuously.

(5) Join the American Rose Society.

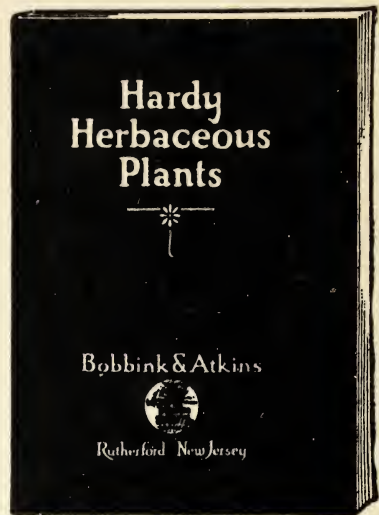
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